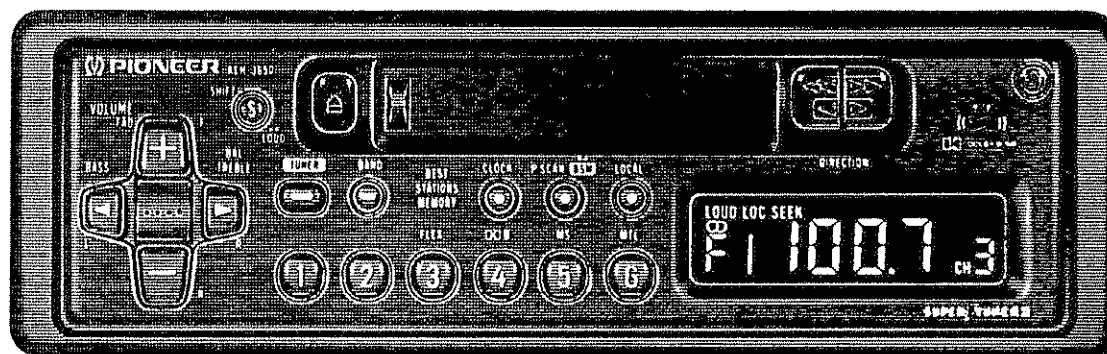## CASSETTE CAR STEREO
## WITH FM/AM ELECTRONIC TUNER

**SUPER TUNER III**

# OWNER'S MANUAL

Thank you for purchasing this PIONEER product. Before attempting operation, be sure to read this manual.

Nous vous remercions d'avoir acheté cet appareil PIONEER. Avant de l'utilizer, prendre soin de lire ce manuel.

Muchas gracias por la adquisición de este producto PIONEER. Antes de tratar de operarlo, lea atentamente este manual.

KEH-3650 KEH-2650
KEH-1650



KEH-3650

## ⏻ PIONEER

# CONTENTS

## Composition of Manual

This manual applies to the KEH-3650 and KEH-2650, KEH-1650. However, the illustrations show the KEH-3650. The KEH-2650 and KEH-1650 have following features which differ to the KEH-3650.

**KEH-2650**

• The music search function is not available.
• The Dolby B NR function is not available.
• The tape selector function is not available.
• The FLEX (Frequency Level Expander) function is not available.

**KEH-1650**

• The music search function is not available.
• The Dolby B NR function is not available.
• The tape selector function is not available.
• The FLEX (Frequency Level Expander) function is not available.
• Front panel is not removal.

# TABLE DES MATIERES

## Composition du manuel

Ce manual s'applique aux KEH-3650 et KEH-2650, KEH-1650.
Toutefois les illustrations montrent le KEH-3650. Les KEH-2650 et KEH-1650 présentent les defférences suivantes par rapport au KEH-3650.

**KEH-2650**

• La fonction de recherche de musique n'est pas disponible.
• La fonction Dolby B NR n'est pas disponible.
• La fonction sélecteur de bande n'est pas disponible.
• La fonction FLEX (Expandeur de niveau de fréquence) n'est pas disponible.

**KEH-1650**

• La fonction de recherche de musique n'est pas disponible.
• La fonction Dolby B NR n'est pas disponible.
• La fonction sélecteur de bande n'est pas disponible.
• La fonction FLEX (Expandeur de niveau de fréquence) n'est pas disponible.
• Le façade n'est pas enlevé.

# ÍNDICE

## Composición del manual

Este manual se aplicable a los modelos KEH-3650 y KEH-2650, KEH-1650.
Sin embargo, las ilustraciones muestran el modelo KEH-3650. Los modelos KEH-2650 y KEH-1650 tinen las siguientes caracteristicas que difieren modelo KEH-3650.

**KEH-2650**

• No se despone de la función de búsqueda de música.
• No se dispone de la función Dolby B NR.
• No se dispone de la función selector de cinta.
• No se dispone de la función FLEX (Expansor de nivel de frecuencia).

**KEH-1650**

• No se dispone de la función de búsqueda de música.
•ˈ No se dispone de la función Dolby B NR.
• No se dispone de la función selector de cinta.
• No se dispone de la función FLEX (Expansor de nivel de frecuencia).
• El panel frontal no es desmontable.

Fig. 1

PIONEER

[١] [1]  [٢] [2]  [٣] [3]  [٤] [4]  [٥] [5]  [٦] [6]  [٧] [7]  [٨] [8]  [٩] [9]

[١٠] [10]

[١١] [11]

[١٢] [12]

[١٣] [13]

الشكل ١

---

LOUD LOC SEEK  F  CH

[١٤] [14]  [١٥] [15]  [١٦] [16]  [١٧] [17]  [١٨] [18]  [١٩] [19]  [٢٠] [20]

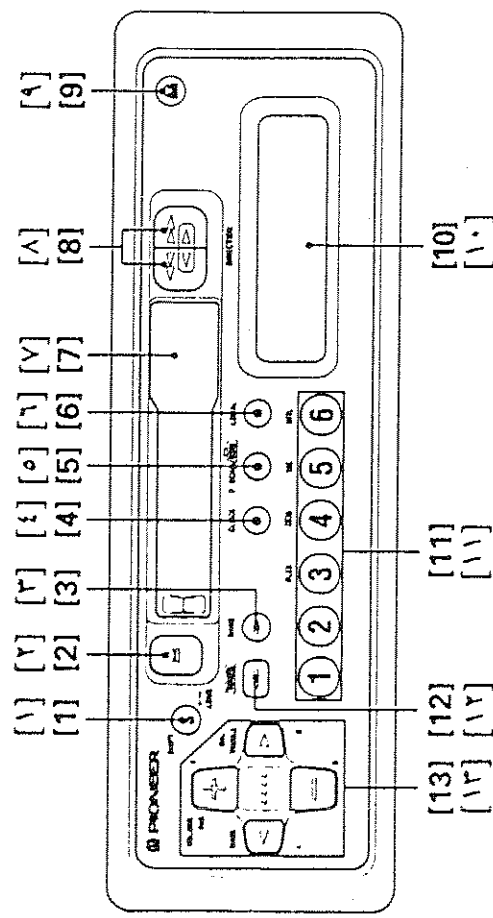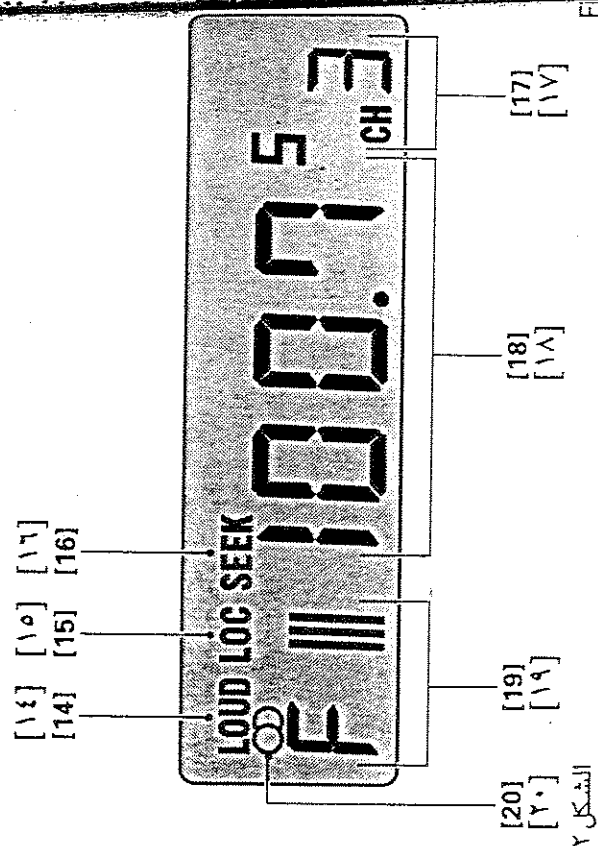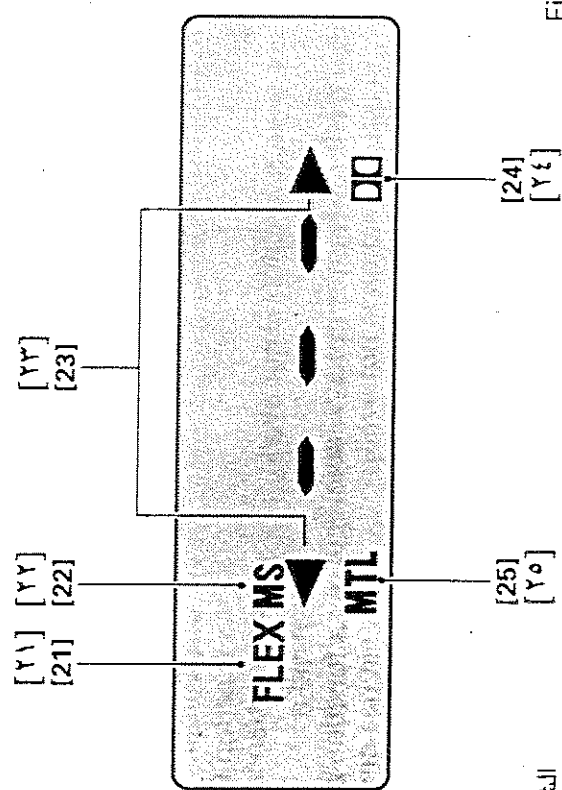الشكل ٢

---

FLEX MS  MTL  DD

[٢١] [21]  [٢٢] [22]  [٢٣] [23]  [٢٤] [24]  [٢٥] [25]

الشكل ٣

3

# Precaution

- If the car's battery is disconnected for any reason, the preset memory will be erased and must be reprogrammed after reconnection of the battery.

---

**In case of trouble**
When the unit does not operate properly, contact your dealer or the nearest authorized PIONEER Service Station. Never remove the top case of the unit to attempt check or repairs.

---

# Changing the Tuning Steps

## Parts Identification (Fig. 1)

[11] ① Changing the FM tuning step button
　　 ② Changing the AM tuning step button

## Changing the AM Tuning Steps

The tuning steps of the AM band for this unit can be switched between 9 kHz and 10 kHz per step. The tuning step should be switched from 9 kHz (which is preset at the factory) to 10 kHz when this unit is used in North America, Central America, or South America.
1. Turn the ignition switch off.
2. While pressing the button ② of [11], turn the ignition switch on. It should be noted that changing the tuning steps also deletes frequencies stored in the tuning memories.

| Specifications | | Initial setting | New setting |
|---|---|---|---|
| AM | Tuning steps | 9 kHz steps | 10 kHz steps |
| | Frequency range | 531 — 1,602 kHz | 530 — 1,710 kHz |

## Changing the FM Tuning Steps

The seek tuning steps of the FM band for this unit can be switched between 100 kHz and 50 kHz per step. (Initial setting 100 kHz)
Change it as required.
1. Turn the ignition switch off.
2. While pressing the button ① of [11], turn the ignition switch on.
- If seek tuning is performed in 50 kHz steps, a frequency before a broadcasting station frequency may be received. Tune in the station by performing manual tuning or seek tuning again.

## Connecting the Units

Note:
*   This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
*   To avoid shorts in the electrical system, be sure to disconnect the battery ⊖ cable before beginning installation.
*   Check whether installation and wiring have been completed correctly. Replace the removed car componets, then connect the end of the cable to the negative ⊖ terminal of the battery.
*   Refer to the owner's manual for details on connecting the various cords of the power amp and other units, then make connections correctly.
*   Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.
*   Route and secure all wiring so it cannot touch any moving parts, such as the gear shift, handbrake, and seat rails. Do not route wiring in places that get hot, such as near the heater outlet. If the insulation of the wiring melts or gets torn, there is a danger of the wiring short-circuiting to the vehicle body.

*   Don't pass the orange lead through a hole into the engine compartment to connect to the battery. This will damage the lead insulation can cause a very dangerous short.
*   Do not shorten any leads. If you do, the protection circuit may fail to work when it should.
*   Never feed power to other equipment by cutting the insulation of the power supply lead of the unit and tapping into the lead. The current capacity of the lead will be exceeded, causing over heating.
*   When replacing fuses, be sure to use only fuse of the rating prescribed on the fuses holder.
*   Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker ⊖ leads are common.
*   Speaker connected to this unit must be high-power types possessing minimum rating of 22 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.

*   When the power amp is being linked with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, when linking this system with the auto-antenna, do not connect to power terminal for the antenna. Such connection can make overcurrent cause malfunctions.
*   When the unit is mounted in a vehicle whose ignition switch does not have the ACC (accessory) position as shown in Fig. 5, be sure to connect the red lead of the unit to the terminal controlled by the ignition switch ON/OFF position. If you do not, the vehicle battery may go flat when you leave your vehicle for several hours.
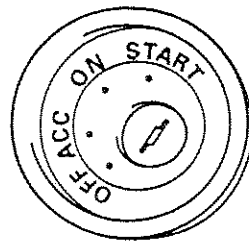


ACC position
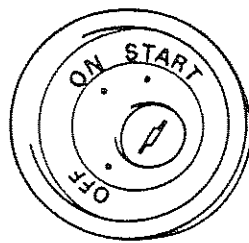
Fig. 4



No ACC position

Fig. 5

5

# Connection Diagram (Fig. 6)

1. Antenna jack
2. Rear out
3. White
4. Red
5. Connecting cords with RCA pin plugs (sold separately)
6. Power amp (sold separetely)
7. Blue
8. Blue
   To system control terminal of the power amp or Auto–antenna relay control terminal (Max.300mA 12VDC).
9. Black (ground)
   To vehicle (metal) body.
10. Red
    To electric terminal controlled by ignition switch (12VDC) ON/OFF.
11. Orange
    To terminal always supplied with power regardless of ignition switch position.
12. Fuse resister
13. Fuse holder
14. With a 2 speaker system, connect to the 2 speakers in the front or the rear.
15. Use this for connections when you have the separately available amplifier.
16. Front/left speaker
17. Front/right speaker
18. Rear/left speaker
19. Rear/right speaker
20. Green
21. Gray
22. Green/black
23. Gray/black
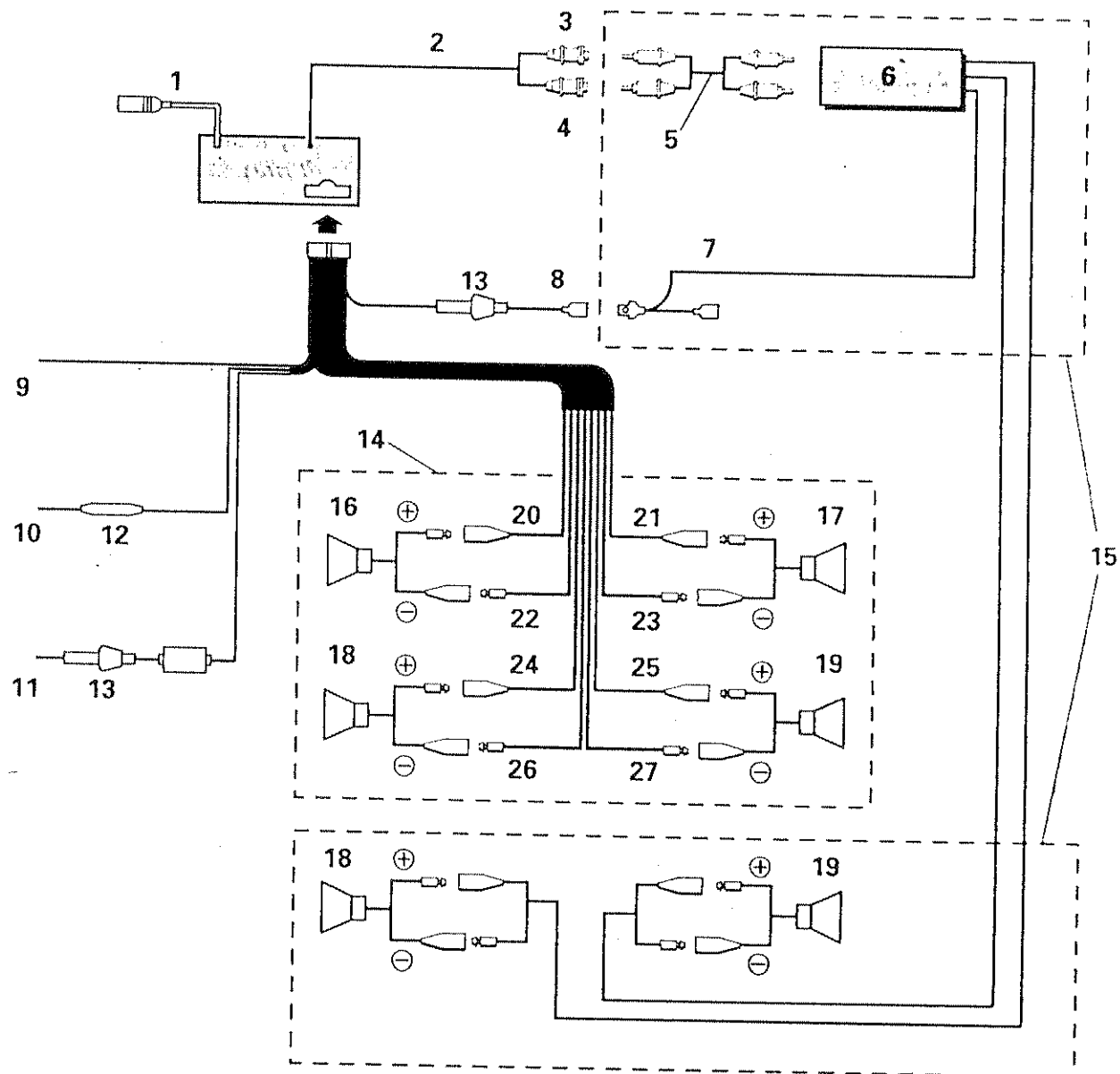24. Green/red
25. Gray/red
26. Black/green
27. Black/gray

Fig. 6

6

# Installation

## Note:

- Before finally installing the unit, connect the wiring temporarily and make sure it is all corrected up properly and the unit and the system work properly.

- Use only the parts included with the unit to ensure proper installation. The use of unauthorized parts can cause malfunctions.

- Consult with your nearest dealer if installation requires the drilling of holes or other modifications of the vehicle.

- Install the unit where it does not get in the drive's way and cannot injure the passenger if there is a sudden stop, like an emergency stop.

- If installation angle exceeds 30° from horizontal, the unit might not give its optimum performance. (Fig. 7)



Fig. 7

## DIN Front/Rear-mount

This unit can be properly installed either from "front" (conventional DIN Front-mount) or "Rear" (DIN Rear-mount installation, utilizing threaded screw holes at the sides of unit chassis). For details, refer to the following illustrated installation methods.

## DIN Front-mount

### Installation with the rubber bush (Fig. 8)

1. Dashboard
2. Holder
   After inserting the holder into the dashboard, then select the appropriate tabs according to the thickness of the dashboard material and bend them.
3. Rubber bush
4. Screw



Fig. 8

7

## Removing the unit (Fig. 9) (Fig. 10)

5. Frame
6. Insert the release pin into the hole in the bottom of the frame and pull out to remove the frame.
   (When reattaching the frame, point the side with a groove downwards and attach it.)
7. Lever
   Insert the levers supplied with the unit into the grooves at both sides of the unit as shown in Fig. 10 until they click. Pulling the levers makes it possible to remove the unit from the dashboard.

5

7

6

Fig. 9
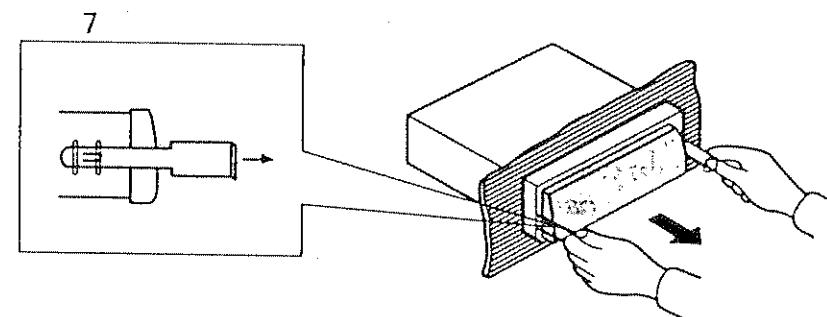
Fig. 10

# DIN Rear-mount

## Installation using the screw holes on the sides of the unit
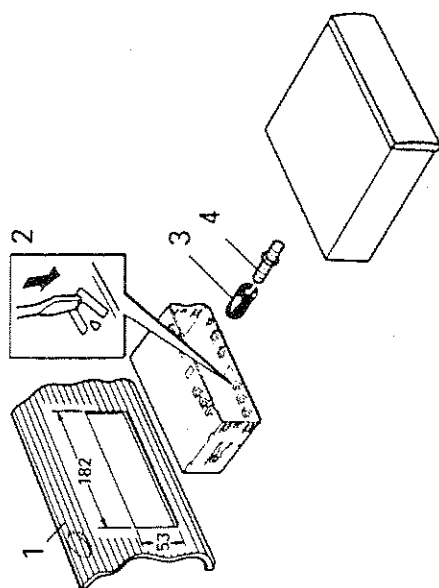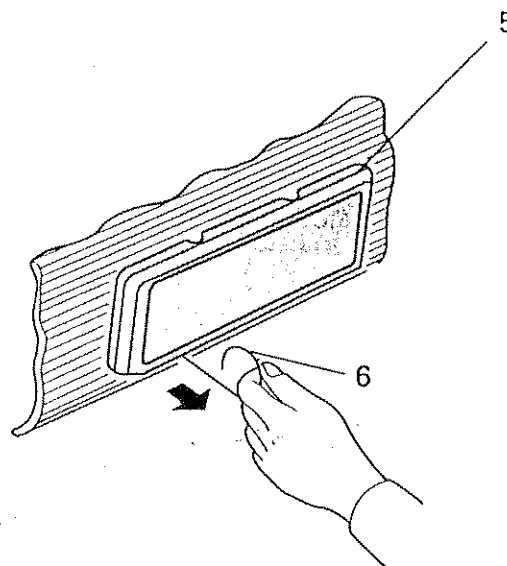
### 1. Remove the frame. (Fig. 11)

8. Frame
9. Insert the release pin into the hole in the bottom of the frame and pull out to remove the frame.
(When reattaching the frame, point the side with a groove downwards and attach it.)
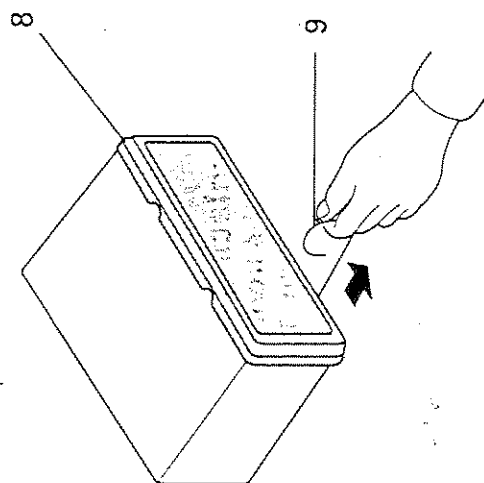
### 2. Fastening the unit to the factory radio mounting bracket (Fig. 12) (Fig. 13)

10. Select a position where the screw holes of the bracket and the screw holes of the main unit become aligned (are fitted), and tighten the screws at 2 places on each side. Use either truss screws (5 × 8 mm) or flush surface screws (5 × 9 mm), depending on the shape of the screw holes in the bracket.

11. Screw
12. Factory radio mounting bracket
13. Dashboard or Console

Fig. 11

Fig. 12

Fig. 13

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# Using the Removable Front Panel (KEH-3650, KEH-2650)

The front panel of this unit can be removed as a theft deterrent.

## Parts Identification

**Fig. 1**
[2] Eject
[8] Fast forward, Rewind/Direction change
[9] Detach button

## Detaching the Front Panel

1. Press button [9], and the right-hand side of the panel will eject.
2. To remove the front panel, pull its right-hand side toward you. (Fig. 14)
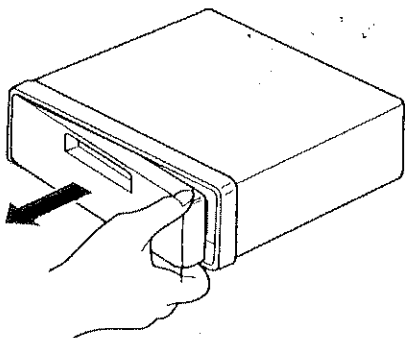


Fig. 14

- Take care not to put pressure on the display or drop the front panel.
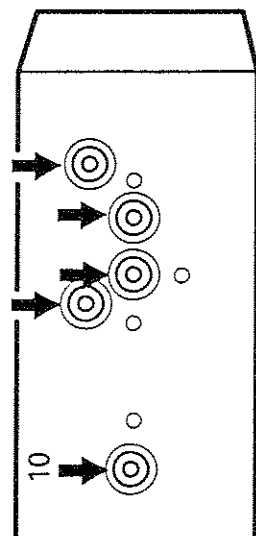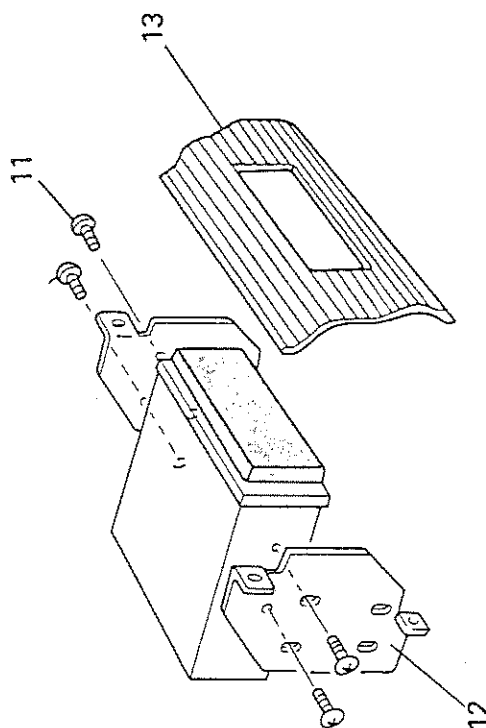
### Optional Protective Case

A separately sold protective case is available for the detached front panel. This case is highly recommended to protect the front panel from shocks and scratches.

## Replacing the Front Panel

Push the front panel into the main body. (Fig. 15) (Fig. 16)
- When replacing the front panel, do not put pressure on the display or control buttons.
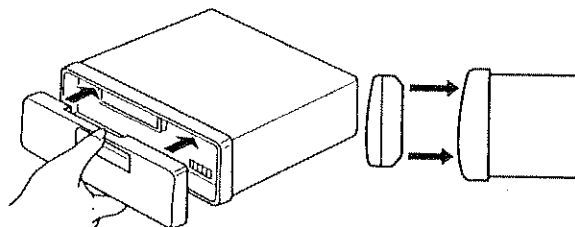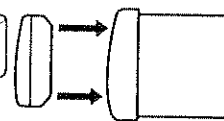


Fig. 15          Fig. 16

- Install the front panel holding it parallel to the main unit. Installing the panel tilted, as shown in the illustrations below, may cause the hook on the front panel to destroy the main unit's electrodes. (Fig. 17) (Fig. 18) (Fig. 19)
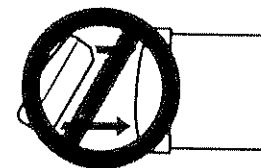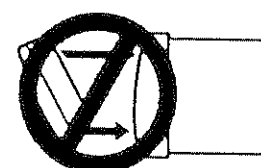


Fig. 17          Fig. 18
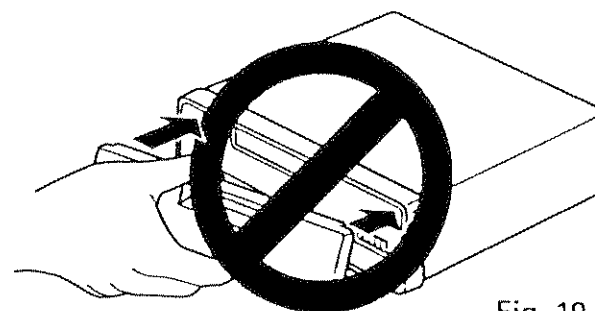


Fig. 19

- Do not install the front panel while holding down buttons [2], [8] and [9] in Fig. 1. Doing so may destroy the buttons and the main unit.
- Note that if the front panel is not attached correctly, pushing button [9] may not release the panel, and the other control buttons may not function.

## Precautions

* Do not touch the contacts on the front panel or on the unit body, since this may result in poor electrical contact. If dirt or other foreign substances get on the contacts, wipe them with a clean, dry cloth. (Fig. 20) (Fig. 21)
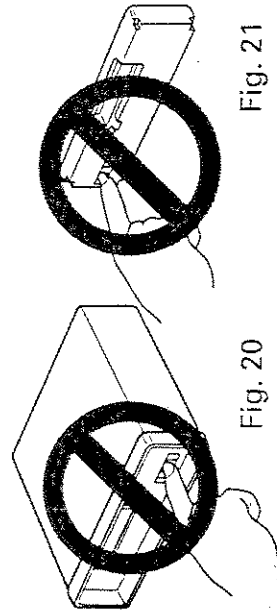
Fig. 20          Fig. 21

## Precautions When Handling the Front Panel

* Do not leave the front panel in any area exposed to high temperatures or direct sunlight.
* Do not drop the front panel or otherwise subject it to strong impact.
* Do not allow such volatile agents as benzine, thinner, or insecticides to come into contact with the surface of the front panel.
* Never try to disassemble the front panel.

## Adjusting Volume and Tone

### Parts Identification

**Fig. 1**
[1] Shift
[2] Eject
[7] Cassette door
[10] Display
[12] Radio power switch
[13] Volume/Audio adjustment

**Fig. 2**
[14] Loudness

### Switching Power On

**Radio**
Press button [12] to switch the tuner power on. Press button [12] again to switch the power off.

**Tape**
Insert the cassette tape through the cassette door [7], and the power will be automatically turned on to get the tape start being played back. To eject the tape, press the button [2].

## Mode Selection

Each press of button [1] changes the mode as follows:
Volume adjustment (V:) — Balance adjustment (F:/B:) — Tone adjustment (B:/T:)
* When you are adjusting fader, balance, bass or treble settings, the indicator will stop at the center setting brifly.
* Balance adjustment and tone adjustment modes will be canceled after about 8 seconds.

### Volume Adjustment

Pressing the (+) side of button [13] increases the volume, while the (−) side decreases it.
(Display shows "V: 0" ~ "V: 31".)
* When driving your vehicle, be sure to keep the volume of the unit set low enough to allow you to hear sounds coming from outside.

### Balance Adjustment

Press button [1] to select balance adjustment mode.
("F:" appears on the display.) Adjust the fader using the (+) or (−) side of button [13]. To adjust the balance, press either the (▼) or (▲) side of button [13] to turn on "B:" and use the (▼) or (▲) side of the button.

## Fader

When you press the (+) side of button [13], the front speaker volume increases gradually while the rear speaker volume decreases. When you press the (−) side the button, the rear speaker volume increases gradually while the front speaker volume decreases.

(Display shows "F: F9" ~ "F: R9".)

• Please set "F: 0" when using 2 speaker system.

## Balance

Pressing the (◄) side of button [13] shifts the balance to the left speaker, while the (►) side shifts it to the right speaker.

(Display shows "B: L9" ~ "B: R9".)

## Tone Adjustment

Press button [1] to select tone adjustment mode. ("B: " appears.) Select the tone you wish to adjust using the (◄) or (►) side of button [13]. Pressing the (►) side boosts the T: (Treble) pressing the (◄) side boosts the B: (Bass).

## Bass Adjustment

Select the Bass mode.
Pressing the (+) side of button [13] increases bass, while the (−) side decreases bass.
(Display shows "B: −6" ~ "B: 6".)

## Treble Adjustment

Select Treble adjustment mode.
Pressing the (+) side of button [13] increases treble, while the (−) side decreases treble.
(Display shows "T: −6" ~ "T: 6".)

## Loudness Select

This "loudness" function enhances both the high and low ranges of sound to give even more power to output even at low volume.

Hold down the button [1] for more than 2 seconds, the loudness function turns on.
(The "LOUD" [14] indicator appears on the display [10]. )

Hold down the button [1] again for more than 2 seconds, the loudness function turns off.

# Using the Radio

## Parts Identification

**Fig. 1**
[3] Band
[5] Present scan/Best Stations Memory (BSM)
[6] Local station
[10] Display
[11] Preset
[12] Radio power switch
[13] Tuning/Local seek sensitivity/Seek, Manual

**Fig. 2**
[15] Local station
[16] Seek
[17] Preset number
[18] Frequency
[19] Band
[20] FM stereo

## Listening to the Radio

1. Press button [12] to switch the radio power on.
2. Press button [3] to select a band.

$$F \mid \rightarrow F \parallel \rightarrow F \parallel\parallel \rightarrow A$$
(FM1)  (FM2)  (FM3)  (AM)

3. **Use seek tuning to tune in a frequency.**
Press the (▲) side of button [13] to automatically tune in the next higher receivable frequency, and the (▼) side for a lower frequency.

4. **Adjust volume and tone (see page 11).**

5. **Assign the tuned frequency to one of the buttons in Bank [11] (preset memory).**
Press and hold down one of the buttons in Bank [11] for at least 2 seconds. The frequency is assigned to the selected button when the preset number [17] stops flashing on the display. Up to 18 FM stations (6 FM1 stations, 6 FM2 stations and 6 FM3 stations), and 6 AM stations can be assigned to the preset memory.

6. **Once a frequency is assigned to a button in Bank [11], you just need to press that button to tune it in.**
This also causes the number of the button pressed to appear at position [17] on the display.

## Adjusting Seek Sensitivity

The seek tuning function of this tuner lets you select between a local setting for reception of strong stations only, and a DX (distant) setting for reception of weaker stations. The local setting also has 4 seek tuning sensitivity levels for FM and 2 levels for AM to match local conditions.

### Changing the Local Seek Sensitivity

1. Use button [3] to select a band.
2. Hold down button [6] for more than 2 seconds, and the display will show you the current local seek sensitivity for about 5 seconds.
3. While the local seek sensitivity remains on the display, press the (▲) side of button [13] to increase the sensitivity level, and the (▼) side to decrease the level as shown below:

FM : L-1 ⇌ L-2 ⇌ L-3 ⇌ L-4
AM : L-1 ⇌ L-2

The L-4 setting allows reception of only the strongest stations, while lower settings let you receive progressively weaker stations.

- The display of local seek sensitivity returns to the frequency when about 5 seconds have elapsed after the change of sensitivity.

## Switching between Local and DX (distant)

Press button [6] to switch between Local and DX (distant) seek tuning.
When "LOC" [15] is shown on the display, seek tuning is performed with the local seek sensitivity. Otherwise, seek tuning is performed with the DX seek sensitivity.

## Manual Tuning

Use manual tuning when stations are too weak to be picked up by seek tuning.

1. Press both (▼) and (▲) sides of button [13] at the same time to clear "SEEK" [16].

2. Each press of the (▲) side of button [13] increases the frequency in 50 kHz steps in the FM band, 9 kHz in the AM band. Pressing the (▼) side of button [13] decreases the frequency. Holding down either side of button [13] changes the frequency at high speed.

- AM frequencies are turned in 10 kHz steps after the tuning steps are changed.

## BSM (Best Stations Memory)

This function automatically locates stronger stations and automatically assigns their frequencies to the buttons in Bank [11], from strongest to weakest. It comes in handy when trying to find local stations while driving.

1. Press button [3] and select a band.
2. Holding down button [5] for about 2 seconds will start BSM search. At this time, "- - -" will flash on the display.
3. The frequency display will return once BSM search is complete, and frequencies are assigned to preset buttons.

* You can cancel BSM search by pressing button [5] again.
* *If there are fewer than 6 strong stations in the area, some of the preset buttons will not be assigned frequencies, so they will retain any frequencies assigned to them previously.*
* *BSM search may take as long as 30 seconds in areas where there are few strong stations.*

## Preset Scan Tuning

This function lets you automatically monitor the stations assigned to the preset buttons.

1. Press the button [5], and the preset number [17] will flash.
   Each station assigned to the preset buttons will be automatically tuned in for about 8 seconds.
2. When you hear a station that you like, press button [5] again to cancel preset scan tuning and remain at that station.

# Using the Tape Deck

## Parts Identification

**Fig. 1**
[2] Eject
[7] Cassette door
[8] Fast forward, Rewind/Direction change
[10] Display
[11] ③ FLEX (Frequency Level Expander) (KEH-3650)
     ④ Dolby B NR (KEH-3650)
     ⑤ Music search (KEH-3650)
     ⑥ Metal (KEH-3650)

**Fig. 3**
[21] FLEX (Frequency Level Expander) (KEH-3650)
[22] Music search (KEH-3650)
[23] Direction
[24] Dolby B NR (KEH-3650)
[25] Metal (KEH-3650)

## *About Cassette Tapes*

* *Do not use tapes longer than C-90-type (90 min.) cassettes. Longer tapes can interfere with tape transport.*
* *A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.*

14

## Listening to a Tape

1. **By inserting the cassette tape into slot [7], power will be turned on and the tape will begin to play.**

At this time, the tape running direction indicator [23] will light up to your satisfaction.

2. **Adjust volume and tone (see page 11).**

3. **To eject the cassette, press button [2].**

- *Do not try to eject the cassette immediately after insertion, as it may result in malfunction. Wait a few seconds.*

- *Be sure to eject the tape when the front panel is removed, or the vehicle's ignition is turned OFF. Leaving the tape in the unit can deform the pinch roller causing wow and flutter during tape playback.*

- *Loose tapes should be rewound with the aid of a pencil and unevenly wound tapes rewound with the use of the fast forward function.*

- *Storing cassettes in areas directly exposed to sunlight or high temperatures can distort them and subsequently interfere with tape transport. (Fig. 22)*
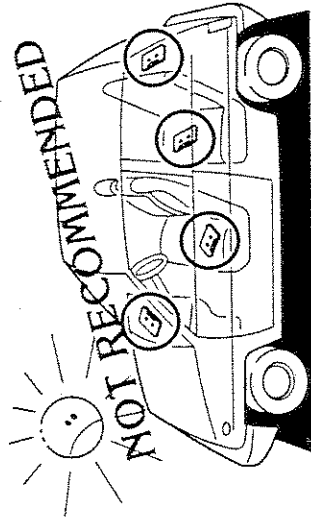


Fig. 22

- *Store unused tapes in a tape case where there is no danger of them becoming loose or being exposed to dust.*

## Cleaning the Head

If the playback head becomes dirty, sound quality will suffer. Periodically (once or twice a month) clean the head with a cotton swab soaked with alcohol. (Fig. 23)
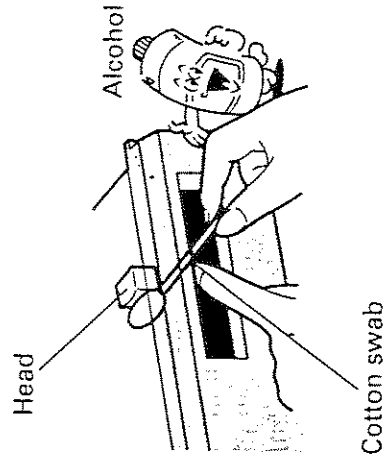


Head
Alcohol
Cotton swab

Fig. 23

## Tape Selector (KEH-3650)

When using metal tapes and chrome tapes, press button ⑥ of Bank [11]. ("MTL" [25] appears.)

## Using Fast Forward and Rewind

Since the transport can be in either direction, both the left and right high-speed tape transport buttons [8] can be regarded as fast forward/rewind buttons.

For fast forward, press the high-speed tape transport button [8] that corresponds to the direction that is shown by the direction indicator [23]. When the end of the tape is reached, playback will automatically begin from the opposite side of the tape (Auto-reverse).

For rewind, press the button [8] that is opposite that of the direction shown by the direction indicator [23]. When the end of the tape is reached, playback will automatically begin from the beginning of the same side of the tape (Auto-replay).

When you release fast forward/rewind, lightly press button [8] located on the opposite side of the one you pressed to fast forward or rewind.

- " ◄- - -► " will flash when the tape is fast forwarding or rewinding.

## Changing Program

Push the fast forward and rewind buttons [8] together to switch from one side of the tape to the other (from Side A to Side B or vice versa).

## Dolby B NR (KEH-3650)

To hear a tape recorded using a Dolby NR system, press button ④ of Bank [11]. ("□□" [24] appears.)

- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
  "DOLBY" and the double-D symbol □□ are trademarks of Dolby Laboratories Licensing Corporation.

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## Using Music Search (KEH-3650)

### Returning to the beginning of selection A

Press button ⑤ of Bank [11] ("MS" [22] appears) and then the high-speed tape transport button [8] for the direction opposite that is shown by the direction indicator [23]. Playback will automatically start from the beginning of selection A.

### Moving from selection A to selection B

Press button ⑤ of Bank [11] ("MS" [22] appears) and then the high-speed tape transport button [8] that corresponds to the direction shown by the direction indicator [23]. Playback will automatically start from the beginning of selection B.

To enable regular fast forward/rewind operations, press the button ⑤ of Bank [11] again ("MS" [22] turns off) to turn the function OFF.

*The following errors will cause the music search function to operate improperly, even though the unit is not malfunctioning. (Fig. 24)*

- *Unrecorded "blank" portions between selections less than 4 seconds — the blank portion cannot be detected by the unit.*
- *Pauses in recorded conversations longer than 4 seconds — the unit reads these as blanks between selections.*
- *Portions recorded at very low volume for more than 4 seconds — the unit reads these as blanks between selections.*



Current selection    Next selection

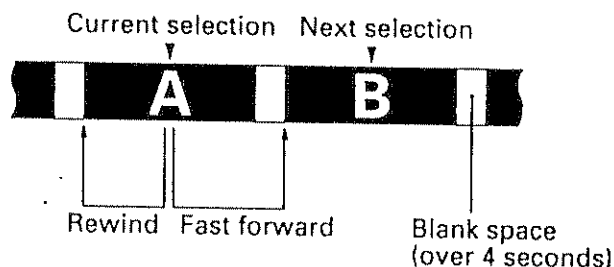Rewind    Fast forward        Blank space (over 4 seconds)

Fig. 24

## FLEX (Frequency Level Expander) (KEH-3650)

If the high-frequency performance is poor when playing back an old or poorly recorded cassette, you can improve it by pressing button ③ in bank [11]. ("FLEX" [21] appears.)

- *This function may have little effect on a cassette offering good sound quality—for instance, one recorded from compact disc.*

# Using the Clock Display

## Parts Identification

**Fig. 1**
[4] Clock
[10] Display
[11] ① Hour adjustment
　　② Minute adjustment

## Displaying the Time

The clock is displayed while button [4] is depressed. Press button [4] again to turn off the clock display.

- The clock display can be used only when the main unit is in operation.
- When the clock display is ON, pressing other buttons will release the clock display. The display will be restored approximately 25 seconds after the button operation has been completed.

## Adjusting the Time

### Adjusting Hours

While holding down button [4], Press button ① in bank [11], to adjust the hour setting of the clock. Each press button ①, advances the hour setting by one hour, and holding it down advances the setting at high speed.

### Adjusting the Minutes

While holding down button [4], Press button ②, in bank [11] to adjust the minute setting of the clock..Each press button ②, advances the minute setting by one minute, and holding it down advances the setting at high speed.

# Specifications

## General

Power source.............. 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system ...................................... Negative type
Max. current consumption ................................... 6.0 A
Dimensions (chassis)............. 178 (W) × 50 (H) × 155 (D) mm
           (nose) ............... 170 (W) × 48 (H) × 10 (D) mm
Weight.................................................... 1.3 kg

## Amplifier

Continuous power output is 10 W per channel min. into 4 ohms,
both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ........................ 22 W × 4 (EIAJ)
Continuous power output ............ 10 W × 4 (1% dist. at 1kHz)
Load impedance.......................... 4Ω (4 — 8Ω allowable)
Preout output level/output impedance
............................................... 500 mV/1 kΩ
Tone controls (bass) ............................ ±10 dB (100 Hz)
        (treble) ........................... ±10 dB (10 kHz)
Loudness contour .............. +12 dB (100 Hz), +6 dB (10 kHz)
                             (Volume: –30 dB)

## Tape player

Tape ..................... Compact cassette tape (C-30 — C-90)
Tape speed ........................................ 4.8 cm/sec.
Fast forward/rewind time............. Approx. 100 sec. for C-60
Wow & flutter ................................. 0.13 % (WRMS)
Frequency response
  (KEH-3650) ..................... Metal:  40 – 17,000 Hz (±3 dB)
  (KEH-2650, KEH-1650)................. 40 – 14,000 Hz (±3 dB)
Stereo separation ...................................... 45 dB
Signal-noise ratio
  (KEH-3650)......... Metal:Dolby B NR IN: 63 dB (IEC-A network)
                  Dolby NR OUT: 55 dB (IEC-A network)
  (KEH-2650, KEH-1650)................... 52 dB (IEC-A network)

## FM tuner

Frequency range................................87.5 — 108 MHz
Usable sensitivity.......... 11 dBf (1.0μV/75Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity .............. 16 dBf (1.7μV/75Ω, mono)
Signal-to-noise ratio....................... 70 dB (IEC-A network)
Distortion ...................... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response...................... 30 — 15,000 Hz (±3 dB)
Stereo separation ...................... 40 dB (at 65 dBf, 1 kHz)

## AM tuner

Frequency range ..................... 531 — 1,602 kHz (9 kHz)
                          530 — 1,710 kHz (10 kHz)
Usable sensitivity..................... 18μV (25 dB) (S/N: 20 dB)
Selectivity ...................................... 50 dB (±9 kHz)
                                  50 dB (±10 kHz)

## Note:

Specifications and the design are subject to possible modification
without notice due to improvements.